

# *A new genus and species of Neotropical freshwater sponges.* \*

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## RESUMO

Um novo gênero de esponjas de água doce é definido no presente trabalho e sua única espécie descrita a partir de material coletado no rio Turvo, afluente do Paranaíba, Estado de Goiás e no rio Itararé, proximidades de Carbópolis, Estado do Paraná. A posição sistemática do novo gênero é objeto de estudos detalhados em realização pelos autores e será tratada exaustivamente em trabalho posterior.

## ABSTRACT

A new genus of freshwater sponges is defined in this paper and its sole species described upon study of material collected from Turvo River at central Brazil (Goiás State) and from Itararé River in the south of Brazil (Paraná State). Systematic position of the new genus is the subject of detailed work being carried by the authors and will be extensively dealt with in a further paper.

### *Sterrastrolepis* n. gen.

Gender: Feminine

Type species: *Sterrastrolepis brasiliensis* n. sp.

#### Definition

Megascleres: Large, stout, smooth, slightly curved anfringula.

Microscleres: Small, slender, spiny, slightly curved, extremely abundant tornotes.

Gemmoscleres: Spherical to sub-spherical, most often ellipsoid sterrasters with a large hilum.

Gemmules: Scanty, usually in contact with the substratum, isolated or in groups. Large, mammillary in shape. Gemmule wall thick and consisting of an inner gemmular membrane and an outer organic matrix where the sterrasters are closely packed together in several layers. Pneumatic layer absent. Two foraminal apertures present.

Sponges: Of medium size, stone hard to hard, grayish or brownish to almost black. Growing proceeds from encrusting to branching forms. In the first instance the sponge forms a thick level crust from which acutely terminated conical processes resembling volcanic chimneys rise up at regular intervals. In later stages of growth, probably attained under favorable conditions, the sponge shows large branching forms, the stout branching arising from a thick basal crust and spreading into short, stout, conical processes with piercing terminations as well.

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\*\* From Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul. Caixa Postal 1188, 90000 Porto Alegre, RS, Brazil.

Skeleton: Consisting of main, radially branched, thick and strong axial fibers which start at the base of the sponge and reach out the conical summits. From these axial fibers a reticulum of slender fibers arises. Axial fibers consisting of an extremely dense linear packing of anfibstrongyla and microscleres. Reticulated fibers consisting of a few anfibstrongyla side by side held in bundles of 2 to 4, the extremities of such bundles touching each other so as to form regular 4 or 5 sided meshes.

Microscleres are also present in reticulated fibers. Very little organic matter (spongin?) binding the spicules together in axial as well as in reticulated fibers.

*Sterrastrolepis brasiliensis* n.sp.

Fig. 1

Holotype: MCN 113, Turvo River (branch of Paranaíba River) in Paraúna, Goiás State, Brazil.

Paratype: MCN 116, Itararé River in Carbópolis, Paraná State, Brazil, W. Nunes leg.

Holotype and paratype deposited at the Museu Nacional da Quinta da Boa Vista, Rio de Janeiro, Brazil. Fragments and slides of holotype and paratype deposited at the Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul (MCN), Porto Alegre, RS, Brazil.

Type locality: Turvo River, branch of Paranaíba River, Goiás State, Brazil.

Description: Holotype is part of a crustlike specimen as described in the definition of the genus. Height of the sponge 5mm at crust part and 1cm at conical elevations. The piece is 3cm wide and 2.5cm long. With gemmules. Brownish turning to black at the conical processes.

Each conical process bears an axial fiber. The sponge shows some large canals in its basal portion, these canals leading to oscular areas situated at the base of the conical processes. Ocular areas few with variable sizes, conspicuous or not at the naked eye. Surface, under magnification, hispid. Pinacoderm conspicuous and stuttered with microscleres.

Paratype consisting of two pieces from probably two different specimens. Specimens branched as described in definition of the genus. One piece is 3.5cm high, 6cm long and 2.5cm wide. The other one is 4.5cm high, 3cm long and 2.5cm wide. Neither piece has gemmules. From these pieces one may assume that the basal gemmulated portion of the sponge remained attached to the substratum: The fragments show small areas of previous contact with the basal portion of the sponge. Except for the absence of gemmules, the color and the differing kind of growth, holotype and paratype are identical in all other respects.

Megascleres: Large, stout, smooth, slightly, curved anfibstrongyla, sometimes displaying inflated extremities. Numerous anfibstrongyla present grade into anfibstrongyla and are thus considered as young anfibstrongyla.

Microscleres: Small, slender, spiny, slightly curved, extremely abundant tornotes sometimes showing an inflated middle portion.

Gemmoscleres: Spherical to sub-spherical, most often ellipsoid sterrasters with a large hilum. A careful study of all variations presented by these gemmoscleres revealed no scleres missing the hilum or the short, rough projections at the surface. Also a search for young gemmoscleres evidenced the presence of tiny spheres already showing a hilum. There is no trace of anfxioxa among these young gemmoscleres.

Gemmules: Scanty, usually in contact with the substratum and thus covered by the basal membrane of the sponge, isolated or in groups of small to large ones (800-900 micrometers to 1mm). Gemmules are mammillary or dome-shaped, provided with two lateral apertures and devoid of foraminal tubules. Inner gemmular wall thick and followed by an organic (spongin?) matrix where the sterrasters are closely packed together in several layers (five to six layers reaching around 110 micrometers). There is no trace of air spaces in this layer.

Distribution: As Paranaíba River is one of the headwaters of Paraná River and Itararé River is the headwater of Paranapanema River, one of the largest contributors to upper course of Paraná River, the new species and thus, the new genus, can be expected to occur inside the Paraná River basin.

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#### Measures of spicules given in micrometers.

		Megascleres		Microscleres		Gemmoscleres	
		Length	Width	Length	Width	Length	Width
MCN 113	Maximal	508.1	49.9	136.5	6.6	53.2	26.6
	Medium	415.4	40.8	109.7	6.2	42.2	22.5
	Minimal	324.8	29.1	83.2	4.9	33.3	19.9
MCN 116	Maximal	508.1	53.3	156.5	9.9		
	Medium	432.7	38.0	112.6	6.3		
	Minimal	333.2	24.9	89.9	4.9		

## LEGEND TO FIG. 1

Camera lucida drawings of the spicular components of *Sterrastrolepis brasiliensis* n.sp. A: megascleres at high magnification (500x); B: gemmoscleres at high magnification (1250x); C: gemmoscleres and microscleres at a same magnification (500x); D: megascleres at low magnification. (125x).

